# Sewer Tap Fee Study

*City of Lee's Summit*

*March 2022*

March 30, 2022

Mr. Jeff Thorn
City of Lee's Summit
1200 SE Hamblen Road
Lee's Summit, Missouri 64081

Subject: Draft Report Sewer Tap Fee Study

Dear Mr. Thorn:

Enclosed please find HDR's draft report regarding the sewer tap fee study for the City of Lee's Summit (City). The development of this report is intended to provide to the City the basis to establish cost-based sewer tap fees. The adoption of final tap fees are a policy decision of the City Council.

This report has been prepared using generally accepted financial and engineering principles. The City's financial, planning, and engineering data were the primary sources for much of the information contained in this report. HDR would recommend that prior to implementing the fees, the tap fees be reviewed by City legal counsel for compliance with Missouri State law.

HDR appreciates the opportunity to assist the City in this matter. We also would like to thank you and your staff for the assistance provided to us. We look forward to future opportunities to work with the City.

Sincerely yours,
HDR Engineering, Inc.

Judy Dean
Senior Financial Analyst

929 108th Ave NE, Suite 1300
Bellevue, WA 98004

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# Executive Summary

## Introduction

HDR Engineering Inc. (HDR) was retained by the City of Lee's Summit (City) to update the sewer tap fees. The purpose of tap fees is to recover the costs of public facilities in existence at the time the fee is imposed, and for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged. These fees are charged to new customers connecting to the system, or the incremental increase for existing customers increasing their demands compared to the value of their existing (pre-expansion) capacity. By establishing cost-based sewer tap fees, the City attempts to have growth-pay-for-growth by having new customers pay their share of the infrastructure in place which will serve them, while also reflecting the value of existing utility customer financing of the capacity available in the existing system. In this way, the City is maintaining equity between new and existing customers for the financial impacts of growth.

The City's current City Wide sewer tap fee was established in 1988. Maybrook and Middle Big Creek were added in 2006 and 2004 respectively with a separate fee in addition to the City Wide fee The City has requested this update to be based on a total City Wide basis. The City recently completed the 2021 Final Draft Wastewater Master Plan (Master Plan) that outlines the existing and future system planning assumptions. Therefore it is prudent to update the sewer tap fees in conjunction with the recent Master Plan.

General industry practice recommends adjusting tap fees annually for changes in the costs of construction, and to update the tap fees every three to five years, or whenever comprehensive planning documents for the systems are updated. By establishing cost-based tap fees, the City is being proactive and taking an important step in providing adequate infrastructure to meet growth-related needs, and more importantly, providing this required infrastructure to new customers in a cost-based and equitable manner.

## Study Overview

The tap fees are calculated in conformance with generally accepted rate making practices and are based on the City's planning and design criteria. The tap fees are based on the existing infrastructure and future capital improvements needed to serve growth divided by the number of equivalent residential units (ERUs) that will be served. A component buy-in (existing) and expansion (future) approach is taken in developing the tap fees as each component can have different planning and design criteria.

The calculations take into account the financing mechanisms of capital improvements. These tap fees are implemented according to the capacity requirement (i.e., the impact) each new connection places on the sewer system. This way, the tap fees are related to the costs the new customer places on the systems and the benefit they derive from infrastructure in place to serve them.

The City currently implements the sewer tap fees based on number of drains. The calculated sewer tap fee is based on a total system wide basis with the elimination of the separate fees for Maybrook and Middle Big Creek tap fee and water meter size in lieu of number of drains. Table ES-1, below, shows the existing and calculated sewer tap fees.

**Table ES-1**
**Present and Calculated Sewer Tap Fee Structure**

| CURRENT | CALCULATED | | | | |
|---|---|---|---|---|---|
| Tap Fee $/Drain[1] | Meter Size | Meter Type | Meter Capacity[2] (gpm) | Capacity Multiplier[3] (CM) | Calculated Tap Fee |
| City Wide $360 | 5/8" x 3/4" | Displacement | 15 | 1.0000 | $1,384 |
| Maybrook $871.36 | 3/4" | Displacement | 25 | 1.6676 | 2,309 |
| M. Big Creek $761.74 | 1" | Displacement | 40 | 2.6676 | 3,693 |
| | 1 1/2" | Displacement | 50 | 3.3338 | 4,615 |
| | 2" | Displacement | 100 | 6.6676 | 9,230 |
| | 2" | Compound | 160 | 10.6676 | 14,768 |
| | 3" | Compound | 320 | 23.3338 | 32,303 |
| | 4" | Compound | 500 | 40.0000 | 55,375 |
| | 6" | Compound | 1,000 | 83.3338 | 115,365 |
| | 8" | Compound | 1,600 | 120.0000 | 166,124 |
| | 10" | Compound | 2,300 | 153.3338 | 212,271 |

(1) Current City Wide sewer tap fee is $30 per drain which is based on 12 drains per unit of $360. Maybrook $42.71 per drain; Middle Big Creek $33.48 per drain.

(2) AWWA M6 Water Meters – Selection, Installation Testing and Maintenance 1999 Table 5-3, p 54-55.

(3) Sample tap Fee calculation for a3/4" displacement type meter

The calculated sewer tap fees for a 5/8" x 3/4" meter size is $1,384 which is an increase of $1,024 from the current sewer tap fee of $360 for 12 drains. The City, as a matter of policy, may charge any amount up to the cost-based sewer tap fee but not over that amount. Charging an amount greater than the net allowable sewer tap fee would not meet the practical basis of charging cost-based tap fees that are proportionally related to the benefit derived by the customer. .

## Consultant's Recommendation

Based on our review and analysis of the City's sewer tap fees, HDR makes the following recommendations:

1. The City should adopt the sewer tap fees for new connections which are no greater than the net allowable sewer tap fees as set forth in this report.
2. The City should annually update the sewer tap fees by a local construction cost index such as the Engineering News Record Construction Cost Index (ENR-CCI). It is recommended at a minimum after five years a review and update of the sewer tap fees is completed. Industry best practice of annual inflationary adjustment can keep the tap fees (sewer system infrastructure investment) relatively current with construction pricing practices.

3. The City should update the actual calculations for the sewer fees at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated by the City, or every five years.

## Disclaimer

HDR, in its calculation of the tap fees for sewer presented in this report, has used generally accepted engineering and ratemaking principles[1]. This should not be construed as a legal opinion with respect to Missouri law. HDR recommends that the City have its legal counsel review the tap fees for sewer as set forth in this report to ensure compliance with Missouri law.

## Summary

The sewer tap fees presented in this report are based on the planning and engineering design criteria of the City's sewer system, the value of the existing assets, past financing of system infrastructure, and generally accepted principles.

The calculated tap fees will provide multiple benefits to the City and will continue the practice of establishing equitable and cost-based sewer tap fees for new customers connecting to the City's sewer system.

[1] Principles established in industry documents referenced as System Development Charges for Water, Wastewater, and Stormwater Facilities, by Arthur C. Nelson; and WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition.

# 1.0 Introduction and Overview of Tap Fees

## 1.1 Introduction

The purpose of tap fees is to fund an equitable and proportionate share of capital costs for the City's sewer system related to providing the necessary capacity to serve new customers. The objective of the analysis is to calculate the cost-based charges for new customers connecting to, or requesting additional capacity on, the City's sewer system. By establishing cost-based tap fees, the City has growth-pay-for-growth by having new customers pay their share of the infrastructure in place which will serve them, while also capturing the value of the portion existing customers have paid for funding the available capacity in the existing system, thereby shielding existing customers from the financial impacts of growth.

The current tap fees were adopted in 1988, and separate fees for Maybrook and Middle Big Creek were added in 2006 and 2004 respectively. General industry recommendations are to adjust these charges annually based on changes in construction costs, and to update the charges every five years, or when comprehensive planning documents for the system have been updated. Given the tap fees have not been updated since 1988, and the City's recent 2021 Final Draft Wastewater Master Plan, a review of the tap fees is prudent at this time to determine parity between existing and new City customers.

## 1.2 Defining Sewer Tap fees

The first step in establishing cost-based tap fees, sometimes referred to as system development charges (SDC), is to gain a better understanding of the definition of a SDC or tap fee[2]. For the purposes of this analysis, a tap fee (or system development charge) is defined as follows:

> *"System development charges are one-time charges paid by new development to finance construction of public facilities needed to serve them."*[3]

Tap fees are generally imposed as a condition of service. The objective of a tap fee is not to generate revenue for the utility, but to create a fiscal balance between existing customers and new customers. In this way, all customers seeking to connect to the utility's system bear an equitable share of the cost of capacity that is invested in both the existing and any future growth-related expansions. Through the implementation of equitable and cost-based tap fees, existing customers will not be burdened with the cost of new development (e.g., system expansion). If cost-based tap fees are not implemented, then existing utility customers will bear (i.e., pay for) a greater proportion of the costs associated with new development. Ultimately, the adoption of the final tap fees is a policy decision by the City Council regarding the sharing of costs between new development and existing customers. The adoption of a cost-based tap fees moves towards a proportional balance of growth pays for growth approach.

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[2] System development charges and tap fees are used interchangeably in this section of the report. System development charges are a more common term for these types of charges.

[3] Arthur C. Nelson, System Development Charges for Water, Sewer, and Stormwater Facilities, Lewis Publishers, New York, 1995, p. 1,

## 1.3 Requirement Under Missouri State Law

In establishing tap fees, an important requirement is that they be developed and implemented in conformance with State and local laws. Missouri does not currently have specific legislation on tap fees. However, industry standards throughout other states is the basic principle that needs to be followed is that the tap fee be based on a proportionate share of the costs of the system required to provide service and that the requirements for adoptions and accounting be followed in compliance with state law.

## 1.4 Methodology to Development of Tap fees

There are various approaches that can be used to establish tap fees which ultimately depend on the available capacity in the utility (i.e., ability to meet future customer demands). The Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition discusses three generally accepted tap fees methods:

- The ***buy-in method,*** is based on the value of the existing system's capacity. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.
- The ***incremental cost method,*** is based on the value or cost to needed to add to the existing system to serve additional customers. This method is typically used when the existing system has limited or no capacity to serve new development now and into the future.
- The ***combined approach*** is based on a blended value of both the existing and future costs needed to serve a new customers. This method is typically used where some capacity is available in the existing system, but future projects are needed in other parts (e.g., wastewater lift station) to serve new development at some point in the future.

The "combined approach" was used for the City's sewer tap fee calculation. The sewer system has specific expansion needs to serve new customers. Therefore, the combined approach is the approach that best fits the City's expansion of facilities given the impacts of growth outlined in the Master Plan. Therefore, the existing and future component cost per ERU is determined, and the cost per ERU for each existing and future component is added together for a combined total.

Within the generally accepted capacity charge methodologies[4], there are a number of different steps used to establish cost-based and equitable tap fees. These steps are as follows:

**Step 1** - Determination of system planning criteria

**Step 2** - Determination of equivalent residential units (ERUs)

**Step 3** – Valuation of system component costs

**Step 4** - Determination of any credits

[4] Methodologies established in industry documents referenced as System Development Charges for Water, Wastewater, and Stormwater Facilities, by Arthur C. Nelson; AWWA M-1 Manual, 7th Edition and WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition.

### Step 1 – Determination of System Planning Criteria

The first step in establishing tap fees is the determination of the system planning criteria. This implies calculating the amount of capacity required by a single-family residential customer. The use of an adopted facility plan or master plan for the utility provides the basis for the capacity charge system planning criteria. These planning documents provide the rational planning basis and criteria for the facilities and investment needed to operate and maintain the system properly and adequately. Generally, for a sewer system the planning criterion is the average flow per ERU. The City's standard specifications and Capital Improvement Plan resulting from the recent Master Plan are the documents and information that are referenced for the determination of the system planning criteria.

### Step 2 – Determination of Equivalent Residential Unit (ERU)

The next step is the determination of the ERUs. An ERU provides a "common denominator" for assessing impact on a utility system. The determination of the total system ERUs is an important calculation in that it provides the linkage between the amounts of infrastructure necessary to provide service to a set number of customers. This implies that if the system is designed to provide service for demands up to the year 2030, then the infrastructure costs are divided by the total ERUs projected to be connected by 2030 to determine the equitable and proportionate cost per ERU.

### Step 3 – Valuation of System Component Costs

Once the number of ERUs, or capacity components are determined, a component by component analysis is undertaken to determine the portion of the capacity charge attributable to each component in dollars per ERU. In this process, the existing assets must be valued. Existing assets may be valued in a number of different ways. These methods may include the following:

- Original Cost (OC) is cost of construction in year of construction
- Original Cost Less Depreciation (OCLD)
- Replacement Cost New (RCN) is current day dollars of replacing existing
- Replacement Cost New Less Depreciation (RCNLD)

Given these four different methods for valuing the assets, the selection of the valuation method certainly arises. The American Water Works Association M-1 manual notes the following concerning these various generally accepted valuation methods:

> "Using the OC and OCLD valuations, the [capacity charge] reflects the original investment in the existing capacity. The new customer "buys in" to the capacity at the OC or the net book value cost (OCLD) for the facilities and as a result pays an amount similar to what the existing customers paid for the capacity (OC) or the remaining value of the original investment (OCLD).
>
> Using the RCN and the RCNLD valuations, the [capacity fee] reasonably reflects the cost of providing new expansion capacity to customers as if the capacity was added at the time the new customers connected to the sewer system. It may be also thought of as a valuation method to fairly compensate the existing customers for the carrying costs of the excess capacity built into the system in advance of when the new customers connect

to the system. This is because, up to the point of the new customer connecting to the system, the existing customers have been financially responsible for the carrying costs of that excess capacity that is available to development."[5]

As a point of reference for this study, the City's tap fee analyses will use a RCN methodology for all assets in the study. The City's *e*xisting assets are valued at "replacement" cost based on original cost escalated to current dollars using a cost index (i.e., the Engineering New Record, Construction Cost Index, or ENR-CCI). This value reasonably reflects the carrying costs of the excess capacity paid by existing customers.

The next step in the analysis is to determine the valuation of the system infrastructure. The combined approach is based on the existing infrastructure plus future expansion-related capital projects, based on an adopted capital plan or master plan and valued at today's cost, regardless of the timing of when the facility will be built. The future component is related only to future capital projects which provide an expansion of capacity to accommodate future growth.

Given a value for capacity and the number of ERU capacity units, the basic formula for calculating the tap fee charge is relatively straight-forward, and is as follows:

$$\frac{\text{Existing Investment (\$)}}{\text{Total ERUs}} + \frac{\text{Future CIP (\$)}}{\text{Future ERUs}} = \text{Maximum Allowable Tap Fee \$ per ERU}$$

In the determination of the tap fee, the cost per ERU as shown above is the "gross tap fee". The "gross tap fee" is calculated before any credits.

### Step 4 – Determination of Any Credits

The last step in the calculation of the tap fee is the determination of any credits. The credit considers the method used to finance infrastructure on the system so that customers are not paying twice for infrastructure – once through the tap fees and again through rates. The double payment can come in through the imposition of a tap fee and then the requirement to pay debt service within a customer's sewer rates.

This component accounts for the outstanding debt principal on existing assets. By segregating the debt service out, the cost can be clearly identified and calculated appropriately. To avoid double-counting of the assets financed with debt, the future principal associated with those assets is deducted from the existing infrastructure value.

## 1.5 Summary

This section of the report has defined tap fees; provided an overview of the requirements under state law, the tap fee approach which must be established between new development and the new or expanded facilities required to accommodate new development, and appropriate apportionment of the cost to the new development in relation to benefits reasonably to be received. The next section of the report will provide a discussion of the calculation of the City's sewer tap fees.

[5] Ibid., p. 268

# 2.0 Development of the Sewer Tap Fees

## 2.1 Introduction

This section of the report presents the key assumptions and details used in calculating the City's sewer tap fees. The calculation of the City's sewer tap fees is based on City-specific accounting and planning information. Specifically, the charges are based upon the City's fixed asset records; the City's current capital improvement plans; existing equivalent residential units (ERUs) and projection of future ERUs. This was based on a total system wide basis.

To the extent that the cost and timing of future capital improvements change, the tap fees presented in this section of the report should be updated to reflect these changes.

## 2.2 Existing Sewer Tap Fee

The City's existing City Wide sewer tap fee is based on the number of drains. The City's existing sewer tap fees is shown below in Table 2 - 1.

**Table 2-1**
**Present[1] Sewer Tap Fees**

| Area | $ per Drain | # of Drains per Unit | Total Tap Fee |
|---|---|---|---|
| City Wide | $30.00 | 12 | $360.00 |
| Maybrook | $42.61 | 12 | $871.36 |
| Middle Big Creek | $33.48 | 12 | $761.74 |

[1] City Wide fee based on 1988 Ordinance. Maybrook 2006 and Middle Big Creek 2004 in addition to the City Wide fee.

As can be seen in Table 2-1, the average total City Wide sewer tap fee is $360.

## 2.3 Calculation of the Sewer Tap Fees

As discussed in Section 1, the process of calculating tap fees is based on a four-step process. In summary form, these steps are as follows:

- Determination of system planning criteria
- Determination of equivalent residential units (ERUs)
- Calculation of the tap fee by system component costs
- Determination of tap fee credits

Each of these steps is discussed in more detail below.

### 2.3.1 Sewer System Planning Criteria

System planning criteria typically involves calculating the amount of sewer demand required by a single-family residential customer. This demand then represents the basis for system design. This calculation was accomplished by using the wastewater flows per ERU to convert existing

demands and design capacities. Therefore, the proportion of currently served ERUs to ultimate design ERUs results in a percentage still available for growth. ERU equivalencies were based on the recent Master Plan documents. A summary of the system criteria for sewer is presented in Table 2-2.

**Table 2-2**
**Sewer Tap Fee – Planning Data**

| Description | Average Daily Flow (gpcd) |
|---|---|
| **Average Daily Flow (gpcd/ERU)[1]** | **275** |

[1] Average daily flow identified in 2012 Final Draft Wastewater Master Plan.

### 2.3.2 Sewer Equivalent Residential Units

System planning criteria are used to establish the capacity needs of an equivalent residential unit (ERU). The treatment capacity in million gallons per day (mgd) is divided by the average daily flow to estimate the build out ERUs. A summary of the buildout ERUs is presented in Table 2-3.

**Table 2-3**
**Sewer Tap Fee – Buildout ERUs**

| Description | Average Daily Flow Capacity (MGD) | Average Daily Flow(gpcd) | Total ERUs[2] |
|---|---|---|---|
| **Equivalent Residential nits – Existing(1)** | 11.153 | 275 | 40,555 |
| **Equivalent Residential Units – Future(2)** | 3.607 | 275 | 13,118 |
| **Total Buildout ERUs** | **14.760** | | **53,673** |

[1] Existing ERUs based on active customers on an ERU basis.
[2] Future ERUs based on future average daily flow identified in the WW Master Plan.

The next step of the analysis is to review the major functional system infrastructure to determine the tap fee for the system. In calculating the tap fees for the City, existing components, debt service for existing facilities, and future capital improvements relating to expansion to meet new growth (demands) were included. The methodology used to calculate each of these components is described below.

### 2.3.3 Sewer Tap Fee

***EXISTING OR BUY-IN COMPONENT*** **–** To calculate the value of the existing assets for the buy-in component, the City's methodology considered the original cost of each asset. The original cost of the asset was then adjusted to the value for replacement cost. City staff and HDR reviewed the existing assets and included only the recent backbone portion or interceptors from 2020. By only including these interceptors it eliminated the separation of Maybrook and Middle Big Creek tap fees. No existing collection was included. This was to prevent assets to be included that were not City paid and were instead funded by grants or developer contributions. The asset and their installation dates were escalated to current, January 2022 dollars, based on the Construction Cost

Index (CCI) for the 20-City average area published in the City Engineering News & Record (ENR). The valuation of the existing assets can be seen on Exhibit 2 of the Technical Appendix.

***DEBT SERVICE COMPONENT*** - This inclusion of a "debt service credit" avoids double charging the customer for the asset value in the existing or buy-in component of the tap fee, and also in the debt service component of the rates. The principal portion of the debt service balance on existing assets is removed from the value prior to calculating the buy-in portion of the fee. By segregating the debt service out, the cost can be clearly identified and calculated appropriately. At the current time, the City sewer does not have any existing outstanding debt.

**FUTURE COMPONENTS** – An important requirement for a tap fee study is the connection between the anticipated future growth on the system and the needed facilities required to accommodate that growth. For purposes of this study, the City's Master Plan Capital Improvement Plan (CIP) which included capacity related projects. City staff reviewed the CIP and updated it with current project assumptions and available information. The projects necessary to meet demand for the sewer system were included in the CIP, along with a projection of the percentage of capacity eligible projects. The CIP detailed projects of $45.3 million of which $14.6 million were directly tap fee eligible. Exhibit 4 of the Technical Appendix contains the details of this portion of the fee.

### 2.3.4 Allowable Sewer Tap Fee

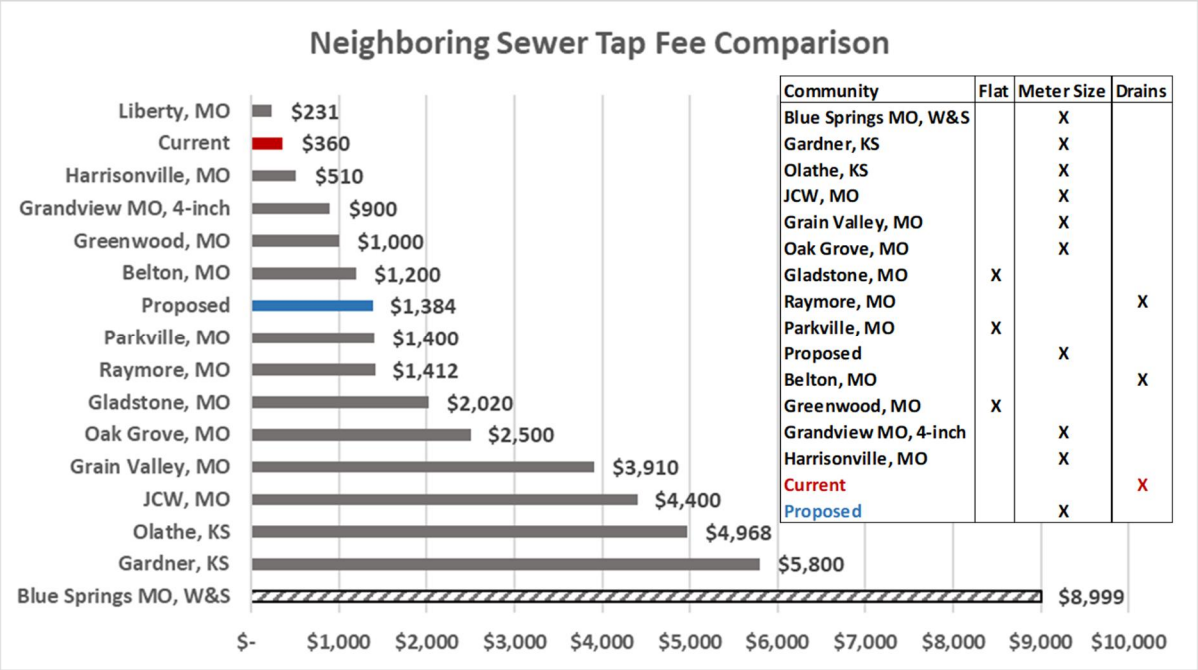
Based on the sum of the component costs calculated above, the allowable sewer tap fee were determined. "Allowable" refers to the concept that the calculated tap fees are the City's cost-based sewer tap fees. The City, as a matter of policy, may charge any amount up to the allowable capacity charge, but not over that amount. Charging an amount greater than the allowable tap fee would not meet the practical basis of a cost-based tap fee. The calculated tap fee of $1,384 which is $1,024 increase from the current fee of $360 (based on 12 drains). Table 2-4 shows a summary of the allowable sewer tap fee. Details are provided in Exhibit 6 of the Technical Appendix.

**Table 2-4**
**Maximum Allowable Sewer Tap Fee**

| | $ RCN | Eligible RCN | ERUs | $/ERU |
|---|---|---|---|---|
| **Existing (Buy-In)** | | | | |
| Interceptors | $46,517,053 | $14,350,508 | 53,673 | $267 |
| Collection | 26,001,360 | 0 | | 0 |
| **Total Buy-In** | **$72,518,413** | **$14,350,508** | | **$267** |
| **Future (Growth)** | | | | |
| Interceptors | $23,580,000 | $4,599,600 | 13,118 | $351 |
| Collection | 21,770,000 | 10,043,190 | 13,118 | 766 |
| **Total Future** | **$45,350,000** | **$14,642,790** | | **$1,117** |
| **Total Tap Fee** | **$117,868,413** | **$28,993,298** | | **$1,384** |

## 2.4 Implementation of the Sewer Tap Fees

The current tap fees are based on number of drains. A comparison of neighboring sewer tap fees shows most communities charge based on the size of the meter, with a few based on a flat rate. Only one other community charges by drain. A comparison of the City's current tap fee to other local surrounding sewer utilities has been developed. Provided in the chart below is a comparison of the City's current and calculated tap fee and the method of implementation.




As can be seen in the above graph, the City's current tap fee is on the lower end of the scale and the calculated tap fee remains below the middle range.

The calculated fee is based on a system wide basis with the elimination of the separate fees for Maybrook and Middle Big Creek. The tap fee based on water meter size in lieu of number of drains is shown in Table 2-5.

**Table 2-5**
**Present and Calculated Sewer Tap Fee Structure**

| CURRENT | CALCULATED | | | | |
|---|---|---|---|---|---|
| Tap Fee $/Drain[1] | Meter Size | Meter Type | Meter Capacity[2] (gpm) | Capacity Multiplier[3] (CM) | Calculated Tap Fee |
| City Wide $360 | 5/8" x 3/4" | Displacement | 15 | 1.0000 | $1,384 |
| Maybrook $871.36 | 3/4" | Displacement | 25 | 1.6676 | 2,309 |
| M. Big Creek $761.74 | 1" | Displacement | 40 | 2.6676 | 3,693 |
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| | 2" | Compound | 160 | 10.6676 | 14,768 |
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| | 4" | Compound | 500 | 40.0000 | 55,375 |
| | 6" | Compound | 1,000 | 83.3338 | 115,365 |
| | 8" | Compound | 1,600 | 120.0000 | 166,124 |
| | 10" | Compound | 2,300 | 153.3338 | 212,271 |

(1) Current City Wide sewer tap fee is $30 per drain which is based on 12 drains per unit of $360. Maybrook $42.71 per drain; Middle Big Creek $33.48 per drain.

(2) AWWA M6 Water Meters – Selection, Installation Testing and Maintenance 1999 Table 5-3, p 54-55.

(3) Sample tap Fee calculation for a3/4" displacement type meter

## 2.5 Key Assumptions

In developing the tap fees for the City's sewer systems, a number of key assumptions were utilized. These are as follows:

- The City's tap fees were developed on the basis of planning documents, anticipated future connections and the needed capital improvements to serve those future connections.
- The sewer tap fees were calculated on a total system wide basis
- The City's asset records as of June 2020 were used to determine the existing infrastructure assets.
- The City projections of future capital infrastructure and ERUs was based on the 2021 Final Draft Wastewater Master Plan.
- The City determined the portion of future improvements that were growth-related.
- The CIP is in 2022 dollars and is the basis for the CIP.

## 2.6 Consultant's Recommendations

Based on our review and analysis of the City's sewer tap fees, HDR makes the following recommendations:

1. The City should adopt the sewer tap fees for new connections which are no greater than the net allowable sewer tap fees as set forth in this report
2. The City should annually update the sewer tap fees by a local construction cost index such as the Engineering News Record Construction Cost Index (ENR-CCI) for no more than five years before a complete update of the sewer tap fees is completed. Industry best practice

of annual inflationary adjustment can keep the tap fees (sewer system infrastructure investment) relatively current with construction pricing practices.

3. The City should update the actual calculations for the sewer tap fees at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated by the City, or every five years.

## 2.7 Summary

The sewer tap fees developed and presented in this report are based on the planning and engineering design criteria of the City's sewer system, the value of the existing assets, and generally accepted rate and fee principles. Consistently updating the fee quarterly based on the Engineering New Record cost index and reviewing the tap fees every five years will continue to create equitable and cost-based charges for new customers connecting to the City's sewer system.

# Technical Appendix

**City of Lee's Summit**
**Exhibit 1**
**Sewer Tap Fee - 2021**
**Development of ERUs**

| | Average Daily Flow Capacity (MGD) | Average Daily Flow (gpcd) | Total ERUs[1] | |
|---|---|---|---|---|
| Existing Equivalent Dwelling Units | 11.153 | 275 | 40,555 | 75.6% |
| Future Equivalent Dwelling Units | 3.607 | 275 | 13,118 | 24.4% Growth |
| **Total ERUs** | 14.760 | | 53,673 | |

**Notes:**

[1] Based on active customers on an ERU basis

[2] Future average daily flow identified in WW Master Plan

**City of Lee's Summit**
**Exhibit 2**
**Sewer Tap Fee - 2021**
**Sewer Tap Interceptor Plant**

**ENR-20 City CCI**
**1/1/2022**
**12,556**

| Year | Equipment List | Original Cost | ENR-CCI of Year Built | 2021 Cost [1] | % Tap Fee Eligible | $ Tap Fee Eligible |
|---|---|---|---|---|---|---|
| **Existing Interceptor** | | | | | | |
| 10/30/1971 | CONST:VALE INTERCEPTOR | $608,794 | 7.94 | $4,834,752 | 0% | $0 |
| 2/28/1974 | CONST: LONGVIEW INTERCEPTOR | 184,743 | 6.22 | 1,148,292 | 0% | 0 |
| 7/30/1979 | BOGGS HOLLOW SEWER PHASE II | 235,446 | 4.18 | 984,400 | 0% | 0 |
| 6/30/1980 | BOGGS HOLLOW INTERC SEWER | 46,818 | 3.88 | 181,596 | 0% | 0 |
| 6/30/1980 | MAYBROOK INTERCEPTOR PHASE IV | 1,361,861 | 3.88 | 5,282,334 | 0% | 0 |
| 7/31/1983 | BIG CREEK SEWER/MAYBROOK INTER | 6,297 | 3.09 | 19,445 | 0% | 0 |
| 6/30/1989 | WEST PRAIRIE LEA INTER | 266,159 | 2.72 | 724,111 | 0% | 0 |
| 4/30/1991 | SEWERLINE-MAYBROOK FORCEMAIN | 1,874,346 | 2.60 | 4,867,310 | 0% | 0 |
| 8/10/1992 | EWS INTERCEPTOR/FORCEMAIN | 124,461 | 2.52 | 313,475 | 0% | 0 |
| 8/10/1992 | EWS INTERCEPTOR/FORCEMAIN | 145,204 | 2.52 | 365,721 | 0% | 0 |
| 8/10/1992 | EWS INTERCEPTORS & FORCEMAIN | 352,639 | 2.52 | 888,180 | 0% | 0 |
| 8/10/1992 | EWS INTERCEPTRO & FORCEMAIN | 363,011 | 2.52 | 914,303 | 0% | 0 |
| 6/30/1997 | L. Cedar Creek Relief Line | 1,951,146 | 2.16 | 4,204,894 | 0% | 0 |
| 6/30/1999 | Big Creek Watershed Sewer | 9,394 | 2.07 | 19,466 | 0% | 0 |
| 8/30/2000 | Greenwood Pump Station | 1,953,409 | 2.02 | 3,942,473 | 0% | 0 |
| 4/11/2002 | Little Cedar Creek Relief PhII | 1,499,806 | 1.92 | 2,880,221 | 0% | 0 |
| 6/30/2005 | Maybrook Interceptor | 353,198 | 1.69 | 595,570 | 0% | 0 |
| 6/30/2020 | Prairie Lee Lake Sewer System | 1,003,237 | 1.10 | 1,098,603 | 100% | 1,098,603 |
| 6/30/2020 | Cedar Creek Watershed Improvem | 3,443,615 | 1.10 | 3,770,960 | 100% | 3,770,960 |
| 6/30/2020 | East Prairie Lee Excess Flow Holding Basin | 1,242,241 | 1.10 | 1,360,326 | 100% | 1,360,326 |
| 6/30/2020 | SPL - Scruggs Rd EFHB Improvements | 1,210,525 | 1.10 | 1,325,596 | 100% | 1,325,596 |
| 6/30/2020 | CC Watershed - Interceptor Improvements Winterset Woods & Sterli | 854,672 | 1.10 | 935,915 | 100% | 935,915 |
| 6/30/2020 | CC Interceptor Improvements Phase III & IV | 667,444 | 1.10 | 730,890 | 100% | 730,890 |
| 6/30/2020 | Middle Big Creek/Mouse Creek H | 4,683,052 | 1.10 | 5,128,217 | 100% | 5,128,217 |
| **Total Existing Interceptors** | | **$24,441,518** | | **$46,517,054** | | **$14,350,508** |
| Total ERUs [2] | | | | | | 53,673 |
| **Existing Interceptors Sewer Tap Fee per ERU** | | | | | | **$267** |
| **Future Interceptors [3]** | | | | | | |
| 1/1/2022 | Large Diameter/Force Main Condition Assessments | $2,000,000 | 1.00 | $2,000,000 | 0.0% | $0 |
| 1/1/2022 | Bogg's Hollow EFHB Site Acquisition | 400,000 | 1.00 | 400,000 | 100.0% | 400,000 |
| 1/1/2022 | Big Creek EFHB (East & West Forks) (LBVSD) | 650,000 | 1.00 | 650,000 | 100.0% | 650,000 |
| 1/1/2022 | Big Creek - Interceptor (BC-C) | 6,300,000 | 1.00 | 6,300,000 | 55.7% | 3,509,100 |
| 1/1/2022 | Big Creek - Interceptor (BC-D) | 10,000,000 | 1.00 | 10,000,000 | 0.0% | 0 |
| 1/1/2022 | Main Extension - Big Creek east of James A Reed (BC-1) | 3,420,000 | 1.00 | 3,420,000 | 0.0% | 0 |
| 1/1/2022 | West Prairie Lee - Interceptor (WPL-C) | 810,000 | 1.00 | 810,000 | 5.0% | 40,500 |
| **Total Future Interceptors** | | **$23,580,000** | | **$23,580,000** | | **$4,599,600** |
| Total ERUs [2] | | | | | | 13,118 |
| **Future Interceptors Sewer Tap Fee per ERU** | | | | | | **$351** |
| **TotalInterceptors Sewer Tap Fee per ERU** | | | | | | **$618** |

**Notes:**

[1] The cost is the replacement cost, based on the Engineering News Record construction cost index (ENR-CCI) 20-cities applied to original cost. Jan 2022 Engineering News Record, Construction Cost Index (ENR-CCI) for 20-City average. Only assets with capacity available included.

[2] Total ERUs (existing and future) based on City data. See Exhibit 1.

[3] Total future projects and future capacity based on capital improvement plan.

**City of Lee's Summit**
**Exhibit 3**
**Sewer Tap Fee - 2021**
**Sewer Tap Fee for Collection System**

**ENR-20 City CCI**
**1/1/2022**
**12,556**

| Year | Equipment List | Original Cost | ENR-CCI of Year Built | 2021 Cost [1] | % Tap Fee Eligible | $ Tap Fee Eligible |
|---|---|---|---|---|---|---|
| **Existing Collection System** | | | | | | |
| 6/30/1959 | 12"VCP-7560' (7/30/1945) | $25,704 | 15.75 | 404,928 | 0% | 0 |
| 6/30/1959 | 15"VCP-4830' (7/31/1945) | 18,740 | 15.75 | 295,221 | 0% | 0 |
| 6/30/1965 | 12"VCP-4920' | 46,838 | 12.93 | 605,640 | 0% | 0 |
| 6/30/1965 | 24"VCP-3000' | 47,310 | 12.93 | 611,744 | 0% | 0 |
| 6/30/1965 | 12"VCP-2070' | 100,879 | 12.93 | 1,304,419 | 0% | 0 |
| 6/30/1965 | 18"VCP | 173,269 | 12.93 | 2,240,461 | 0% | 0 |
| 6/30/1967 | 20"VCP-1713' | 29,738 | 11.69 | 347,651 | 0% | 0 |
| 6/30/1967 | 12"VCP-3977' | 41,759 | 11.69 | 488,182 | 0% | 0 |
| 6/30/1967 | 16"VCP-7737' | 100,581 | 11.69 | 1,175,838 | 0% | 0 |
| 6/30/1969 | 21"VCP-2550' | 52,530 | 9.89 | 519,734 | 0% | 0 |
| 6/30/1971 | 21"VCP-1080' | 27,724 | 7.94 | 220,171 | 0% | 0 |
| 6/30/1971 | 15"VCP-2880' | 47,232 | 7.94 | 375,094 | 0% | 0 |
| 6/30/1973 | 12"VCP-300' | 6,180 | 6.63 | 40,946 | 0% | 0 |
| 6/30/1973 | 15"VCP-1050 | 8,812 | 6.63 | 58,385 | 0% | 0 |
| 6/30/1973 | 14"VCP-1845' | 35,701 | 6.63 | 236,541 | 0% | 0 |
| 6/30/1973 | 18"VCP-2100' | 60,333 | 6.63 | 399,744 | 0% | 0 |
| 6/30/1973 | 21"VCP-2700' | 83,052 | 6.63 | 550,271 | 0% | 0 |
| 6/30/1973 | 12"VCP-18,143' | 308,499 | 6.63 | 2,043,997 | 0% | 0 |
| 6/30/1977 | 16"VCP-3722' | 23,973 | 4.87 | 116,846 | 0% | 0 |
| 6/30/1977 | 14"VCP-1790' | 43,766 | 4.87 | 213,318 | 0% | 0 |
| 6/30/1977 | 12"VCP-24231' | 527,024 | 4.87 | 2,568,741 | 0% | 0 |
| 7/30/1981 | SEWER PIPE, 1270' PF 12"/264' | 68,666 | 3.55 | 243,887 | 0% | 0 |
| 7/30/1984 | 832 LF 12" PVC,296 LF 10" PVC | 38,600 | 3.03 | 116,894 | 0% | 0 |
| 7/30/1991 | SMITH-LEMONE | 103,810 | 2.60 | 269,574 | 0% | 0 |
| 10/30/1991 | SEWERLINE 12 2903' 50 HWY | 137,893 | 2.60 | 358,081 | 0% | 0 |
| 8/10/1992 | EWS INTERCEPTORS/FORCEMAIN | 51,859 | 2.52 | 130,615 | 0% | 0 |
| 8/14/1992 | WINDSBORO @ CHARLESTON PARK | 51,965 | 2.52 | 130,882 | 0% | 0 |
| 3/15/1993 | WINDSBORO @ CHARLESTON PARK | 34,818 | 2.41 | 83,906 | 0% | 0 |
| 7/31/1994 | SEWERLINE-136'OF12" WINTERSET | 6,460 | 2.32 | 14,998 | 0% | 0 |
| 8/1/1994 | S UNITY SEWER | 24,295 | 2.32 | 56,405 | 0% | 0 |
| 8/1/1994 | RELIEF LINE | 46,288 | 2.32 | 107,465 | 0% | 0 |
| 8/1/1994 | RELIEF LINE | 92,576 | 2.32 | 214,930 | 0% | 0 |
| 8/1/1994 | UNITY SEWER | 105,684 | 2.32 | 245,363 | 0% | 0 |
| 8/1/1994 | UNITY SEWER | 222,300 | 2.32 | 516,106 | 0% | 0 |
| 8/1/1994 | RELIEF LINE | 388,602 | 2.32 | 902,203 | 0% | 0 |
| 8/1/1994 | RELIEF LINE | 453,189 | 2.32 | 1,052,152 | 0% | 0 |
| 8/12/1994 | SEWERLINE-110'OF12" WINDSBORO | 5,225 | 2.32 | 12,131 | 0% | 0 |
| 3/1/1995 | SEWERLINE-324'OF 12" UPGRADES | 35,794 | 2.29 | 82,145 | 0% | 0 |
| 3/1/1995 | SEWERLINE-447' OF 12" UPGRADES | 49,281 | 2.29 | 113,096 | 0% | 0 |
| 3/30/1995 | HOLLYWOOD CROSS | 99,270 | 2.29 | 227,817 | 0% | 0 |
| 3/30/1995 | WINTERSET PARK | 170,050 | 2.29 | 390,252 | 0% | 0 |
| 4/30/1995 | MAPLE TREE | 84,170 | 2.29 | 193,164 | 0% | 0 |
| 5/3/1995 | WINTERSET PARK SCH | 22,373 | 2.29 | 51,344 | 0% | 0 |
| 6/30/1995 | SEWERLINE-714'OF12" WINTERSET | 33,915 | 2.29 | 77,832 | 0% | 0 |
| 6/30/1996 | SEWER 12" | 45,078 | 2.23 | 100,707 | 0% | 0 |
| 6/30/1997 | SEWER 15" | 37,814 | 2.16 | 81,493 | 0% | 0 |
| 6/30/1998 | OAKS RIDGE DEVELOPMENT 12" SWR | 34,091 | 2.12 | 72,303 | 0% | 0 |
| 6/30/1998 | HAWN BEDDING COMPANY 12" SWR | 48,878 | 2.12 | 103,663 | 0% | 0 |
| 6/30/1998 | RIDGEWOOD HILLS | 101,128 | 2.12 | 214,478 | 0% | 0 |
| 6/30/1998 | BROWNING-DARK FARM/MO DOT | 107,445 | 2.12 | 227,877 | 0% | 0 |

**City of Lee's Summit**
**Exhibit 3**
**Sewer Tap Fee - 2021**
**Sewer Tap Fee for Collection System**

**ENR-20 City CCI**
**1/1/2022**
**12,556**

| Year | Equipment List | Original Cost | ENR-CCI of Year Built | 2021 Cost [1] | % Tap Fee Eligible | $ Tap Fee Eligible |
|---|---|---|---|---|---|---|
| 6/30/1999 | MO. Dept of Transportation, | 70,633 | 2.07 | 146,366 | 0% | 0 |
| 6/30/1999 | Bridlewood 1st Plat, | 74,285 | 2.07 | 153,935 | 0% | 0 |
| 6/30/1999 | Longview Farms, | 141,222 | 2.07 | 292,643 | 0% | 0 |
| 11/20/1999 | Eagle Creek 1st Plat Lots 1-51 | 53,865 | 2.07 | 111,620 | 0% | 0 |
| 11/20/1999 | Eagle Creek 1st Plat Lots 1-51 | 83,720 | 2.07 | 173,486 | 0% | 0 |
| 8/17/2000 | Lakewood Business Plan N | 74,385 | 2.02 | 150,128 | 0% | 0 |
| 12/4/2000 | Eagle Creek, 3rd plat | 45,600 | 2.02 | 92,032 | 0% | 0 |
| 12/11/2000 | Stoney Creek Estates, 2nd plat | 72,410 | 2.02 | 146,142 | 0% | 0 |
| 3/30/2001 | Courchevel Ranch Condos P1 | 133,048 | 1.98 | 263,733 | 0% | 0 |
| 10/1/2001 | Monarch View 1st Plat | 21,375 | 1.98 | 42,371 | 0% | 0 |
| 10/23/2001 | Villas-Summit Ridge | 40,850 | 1.98 | 80,975 | 0% | 0 |
| 11/12/2001 | Eagle Creek 6th Plat | 12,505 | 1.98 | 24,788 | 0% | 0 |
| 12/13/2001 | LS Elementary#15 Pryor/Hook | 270,165 | 1.98 | 535,534 | 0% | 0 |
| 1/18/2002 | Parkwd-Stoney Creek 1st Plat | 42,900 | 1.92 | 82,385 | 0% | 0 |
| 2/7/2002 | Summit Woods Crossing | 124,830 | 1.92 | 239,723 | 0% | 0 |
| 6/30/2003 | Meadows Summit Ridge 2nd plat | 66,215 | 1.88 | 124,196 | 0% | 0 |
| 6/30/2003 | Victoria Park 1st plat | 82,508 | 1.88 | 154,755 | 0% | 0 |
| 6/30/2003 | Meadows Summit Ridge 1st plat | 101,698 | 1.88 | 190,748 | 0% | 0 |
| 6/30/2003 | Shamrock Business Park | 616,535 | 1.88 | 1,156,399 | 0% | 0 |
| 6/30/2004 | Eagle Creek Townhomes 1st | 112,871 | 1.76 | 199,179 | 0% | 0 |
| 6/30/2004 | Exec Lakes Medical Office | 24,843 | 1.76 | 43,839 | 0% | 0 |
| 6/30/2007 | 1,100' - 12" @ $47.50 | 52,250 | 1.58 | 82,341 | 0% | 0 |
| 6/30/2008 | 1100' - 12" @ $47.50 per ft. | 52,250 | 1.51 | 78,934 | 0% | 0 |
| 6/30/2008 | Approx. 1543 LF 24" | 71,780 | 1.51 | 108,438 | 0% | 0 |
| 6/30/2008 | 12" 1631' @ $47.50 | 77,473 | 1.51 | 117,037 | 0% | 0 |
| **Total Existing Collection Plant** | | **$7,031,373** | | **$26,001,360** | | **$0** |
| Total ERUs [3] | | | | | | 53,673 |
| **Existing Collection Plant Sewer Tap Fee per ERU** | | | | | | **$0** |
| **Future Collection Plant [4]** | | | | | | |
| 1/1/2022 | Big Creek - Trunk Main (BC-A) | $5,360,000 | 1.00 | $5,360,000 | 100.0% | $5,360,000 |
| 1/1/2022 | CC Improvements - MH 29-220 to MH 37-001 (McClendon Ditc | 850,000 | 1.00 | 850,000 | 100.0% | 850,000 |
| 1/1/2022 | Main Extension - Big Creek (BC_46-029) | 120,000 | 1.00 | 120,000 | 40.0% | 48,000 |
| 1/1/2022 | Main Extension - Big Creek (BC_53-014) | 740,000 | 1.00 | 740,000 | 40.0% | 296,000 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-B) | 990,000 | 1.00 | 990,000 | 15.2% | 150,480 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-C2) | 1,950,000 | 1.00 | 1,950,000 | 14.9% | 290,550 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-D) | 700,000 | 1.00 | 700,000 | 0.0% | 0 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-E) | 610,000 | 1.00 | 610,000 | 0.0% | 0 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-F) | 830,000 | 1.00 | 830,000 | 100.0% | 830,000 |
| 1/1/2022 | Middle Big Creek - Trunk Main (MBC-1) | 340,000 | 1.00 | 340,000 | 0.0% | 0 |
| 1/1/2022 | Mouse Creek - Trunk Main (MC-A) | 110,000 | 1.00 | 110,000 | 100.0% | 110,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_49-015) | 930,000 | 1.00 | 930,000 | 40.0% | 372,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_49-014) | 910,000 | 1.00 | 910,000 | 40.0% | 364,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_51-004) | 990,000 | 1.00 | 990,000 | 40.0% | 396,000 |
| 1/1/2022 | Main Extension - Little Cedar Creek (LCC_16-005) | 1,880,000 | 1.00 | 1,880,000 | 40.0% | 752,000 |
| 1/1/2022 | Main Extension - Little Cedar Creek (LCC_23-011) | 190,000 | 1.00 | 190,000 | 40.0% | 76,000 |
| 1/1/2022 | Main Extension - Middle Big Creek (MBC_61-399) | 70,000 | 1.00 | 70,000 | 40.0% | 28,000 |
| 1/1/2022 | West Prairie Lee - Trunk Main (WPL-B) | 2,560,000 | 1.00 | 2,560,000 | 4.3% | 110,080 |
| 1/1/2022 | West Prairie Lee - Trunk Main (WPL-B1) | 210,000 | 1.00 | 210,000 | 4.8% | 10,080 |

**City of Lee's Summit**
**Exhibit 3**
**Sewer Tap Fee - 2021**
**Sewer Tap Fee for Collection System**

**ENR-20 City CCI**
**1/1/2022**
**12,556**

| Year | Equipment List | Original Cost | ENR-CCI of Year Built | 2021 Cost [1] | % Tap Fee Eligible | $ Tap Fee Eligible |
|---|---|---|---|---|---|---|
| 1/1/2022 | West Prairie Lee - Trunk Main (WPL-B1) | 210,000 | 1.00 | 210,000 | 4.8% | 10,080 |
| 1/1/2022 | South Prairie Lee - Trunk Main (SPL-B1) | 670,000 | 1.00 | 670,000 | 0.0% | 0 |
| 1/1/2022 | South Prairie Lee - Trunk Main (SPL-B2) | 760,000 | 1.00 | 760,000 | 0.0% | 0 |
| **Total Future Collection Plant** | | **$21,770,000** | | **$21,770,000** | | **$10,043,190** |
| Future ERUs [3] | | | | | | 13,118 |
| **Future Collection Plant Sewer Tap Fee per ERU** | | | | | | **$766** |
| **Total Collection Plant Sewer Tap Fee per ERU** | | | | | | **$766** |

**Notes:**

[1] The cost is the replacement cost, based on the Engineering News Record construction cost index (ENR-CCI) 20-cities applied to original cost. Jan. 2022 Engineering News Record, Construction Cost Index (ENR-CCI) for 20-City average.

[2] Work in progress not shown.

[3] Total ERUs (existing and future) based on City data. See Exhibit 1.

[4] Total future projects and future capacity based on capital improvement plan. See Exhibit 5.

**City of Lee's Summit**
**Exhibit 4**
**Sewer Tap Fee - 2021**
**Summary of Capital Improvement Plan**

**ENR-20 City CCI**
**1/1/2022**
**12,556**

| | Capital Improvement Projects [1] | CWIP 2021 | CWIP 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2033 | 2038 | 2043 | Future | Total Project Cost | % Growth Related [2] | 2021 | Total Growth Related |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Interceptors** | | | | | | | | | | | | | | | | | | |
| 1/1/2022 | Large Diameter/Force Main Condition Assessments | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | 0 | 0 | 0 | $0 | $2,000,000 | 0.0% | 1.00 | $0 |
| 1/1/2022 | Bogg's Hollow EFHB Site Acquisition | | 400,000 | | | | | | | | | | | 0 | 0 | 400,000 | 100.0% | 1.00 | 400,000 |
| 1/1/2022 | Big Creek EFHB (East & West Forks) (LBVSD) | | 650,000 | | | | | | | | | | | 0 | 0 | 650,000 | 100.0% | 1.00 | 650,000 |
| 1/1/2022 | Big Creek - Interceptor (BC-C) | | | | | | | | | | | | 6,300,000 | 0 | 0 | 6,300,000 | 55.7% | 1.00 | 3,509,100 |
| 1/1/2022 | Big Creek - Interceptor (BC-D) | | | | | | | | | | | | | 10,000,000 | 0 | 10,000,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | Main Extension - Big Creek east of James A Reed (BC-1) | | | | | | | | | | | | | 3,420,000 | 0 | 3,420,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | West Prairie Lee - Interceptor (WPL-C) | | | | | 810,000 | | | | | | | | | 0 | 810,000 | 5.0% | 1.00 | 40,500 |
| | | $200,000 | $1,250,000 | $200,000 | $200,000 | $1,010,000 | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $0 | $6,300,000 | $13,420,000 | $0 | $23,580,000 | | | $4,599,600 |
| | **Collection** | | | | | | | | | | | | | | | | | | |
| 1/1/2022 | Big Creek - Trunk Main (BC-A) | | | | | | | | | | | $5,360,000 | | | $0 | $5,360,000 | 100.0% | 1.00 | $5,360,000 |
| 1/1/2022 | CC Improvements - MH 29-220 to MH 37-001 (McClendon Ditch) | | 850,000 | | | | | | | | | | | | 0 | 850,000 | 100.0% | 1.00 | 850,000 |
| 1/1/2022 | Main Extension - Big Creek (BC_46-029) | | | | | | 120,000 | | | | | | | | 0 | 120,000 | 40.0% | 1.00 | 48,000 |
| 1/1/2022 | Main Extension - Big Creek (BC_53-014) | | | | | | | | 740,000 | | | | | | 0 | 740,000 | 40.0% | 1.00 | 296,000 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-B) | | | | | | | | 990,000 | | | | | | 0 | 990,000 | 15.2% | 1.00 | 150,480 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-C2) | | | | | | | | 1,950,000 | | | | | | 0 | 1,950,000 | 14.9% | 1.00 | 290,550 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-D) | | | | | | | | | | | | | | 700,000 | 700,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-E) | | | | | | | | | | | | | | 610,000 | 610,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | Cedar Creek - Trunk Main (CC-F) | | | | | | | | 830,000 | | | | | | 0 | 830,000 | 100.0% | 1.00 | 830,000 |
| 1/1/2022 | Middle Big Creek - Trunk Main (MBC-1) | | | | | | | | | | | | | 0 | 340,000 | 340,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | Mouse Creek - Trunk Main (MC-A) | | | | | | | | 110,000 | | | | | | 0 | 110,000 | 100.0% | 1.00 | 110,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_49-015) | | | | | | | | 930,000 | | | | | | 0 | 930,000 | 40.0% | 1.00 | 372,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_49-014) | | | | | | | | | | | 910,000 | | | 0 | 910,000 | 40.0% | 1.00 | 364,000 |
| 1/1/2022 | Main Extension - Mouse Creek (MC_51-004) | | | | | | | | 990,000 | | | | | | 0 | 990,000 | 40.0% | 1.00 | 396,000 |
| 1/1/2022 | Main Extension - Little Cedar Creek (LCC_16-005) | | | | | | | | | | | 1,880,000 | | | 0 | 1,880,000 | 40.0% | 1.00 | 752,000 |
| 1/1/2022 | Main Extension - Little Cedar Creek (LCC_23-011) | | | | | | | | 190,000 | | | | | | 0 | 190,000 | 40.0% | 1.00 | 76,000 |
| 1/1/2022 | Main Extension - Middle Big Creek (MBC_61-399) | | | | | | | | 70,000 | | | | | | 0 | 70,000 | 40.0% | 1.00 | 28,000 |
| 1/1/2022 | West Prairie Lee - Trunk Main (WPL-B) | | | | | | | 2,560,000 | | | | | | | 0 | 2,560,000 | 4.3% | 1.00 | 110,080 |
| 1/1/2022 | West Prairie Lee - Trunk Main (WPL-B1) | | | | | | 210,000 | | | | | | | | 0 | 210,000 | 4.8% | 1.00 | 10,080 |
| 1/1/2022 | South Prairie Lee - Trunk Main (SPL-B1) | | | | | | | | | | | | | 670,000 | 0 | 670,000 | 0.0% | 1.00 | 0 |
| 1/1/2022 | South Prairie Lee - Trunk Main (SPL-B2) | | | | | | | | | | | | | 760,000 | 0 | 760,000 | 0.0% | 1.00 | 0 |
| | | $0 | $850,000 | $0 | $0 | $0 | $330,000 | $2,560,000 | $6,800,000 | $0 | $0 | $8,150,000 | $0 | $1,430,000 | $1,650,000 | $21,770,000 | | | $10,043,190 |
| | **Total Sewer System Plan** | **$200,000** | **$2,100,000** | **$200,000** | **$200,000** | **$1,010,000** | **$530,000** | **$2,760,000** | **$7,000,000** | **$200,000** | **$200,000** | **$8,150,000** | **$6,300,000** | **$14,850,000** | **$1,650,000** | **$45,350,000** | | | **$14,642,790** |

**Notes:**
[1] Based on Draft 2021 Master Plan which are Tap Fee related, does not include developer projects listed in Master Plan. Construction work in progress for 2021 and 2022 are completed but not included in assets yet therefore are included here. CIP in 2022 $.
[2] Projects are recommended for monitoring out in future years when growth is expected to trigger a project need. No cost is being applied to Tap Fee calculation at this time.
[3] Growth related eligible future projects based on Draft 2021 Master Plan. See Exhibit 1.

**City of Lee's Summit**
**Exhibit 5**
**Sewer Tap Fee - 2021**
**Summary of Outstanding Debt Principal Credit**

| | Principal | Interest | Total | Total Sewer Principal |
|---|---|---|---|---|
| **Outstanding Principal Payments:** | | | | |
| | $0 | $0 | $0 | **$0** |
| | 0 | 0 | 0 | **0** |
| **Total** | $0 | $0 | $0 | **$0** |

| | |
|---|---|
| Total ERUs [2] | 53,673 |
| **Debt Service Credit per ERU** | **$0** |

**Notes:**
[1] There is no outstanding debt at this time.
[2] Total ERUs based on City data. See Exhibit 1.

**City of Lee's Summit**
**Exhibit 6**
**Sewer Tap Fee - 2021**
**Summary of Sewer Tap Fee Calculation**

| | Number of Drains per Unit | Current $/Drain | Total Current Tap Fee | Calculated Tap Fee | $ Change |
|---|---|---|---|---|---|
| **City Wide Fee** | **12** | **$30.00** | **$360.00** | **$1,384.00** | **$1,024.00** |
| Maybrook Plus City Wide | 12 | 42.61 | 871.36 | 1,384.00 | $512.64 |
| Middle Big Creek Plus City Wide | 12 | 33.48 | 761.74 | 1,384.00 | $622.26 |

| Sewer Tap Fee Calculation Results | | | |
|---|---|---|---|
| | **Existing** | **Future** | **Total** |
| Interceptors | $267 | $351 | $618 |
| Collection | 0 | 766 | 766 |
| **Total** | **$267** | **$1,117** | **$1,384** |
| Less: Debt Service Credit | $0 | $0 | $0 |
| Net Sewer Tap Fee | $267 | $1,117 | $1,384 |
| **Tap Fee** | **$267** | **$1,117** | **$1,384** |
| Present Tap Fee | | | $360 |
| $ Change | | | $1,024 |

| Sewer Tap Fee Calculation Results $/per Drain | | | | |
|---|---|---|---|---|
| | **Existing** | **Future** | **Per Drain** | **Total** |
| Interceptors | $ 22.25 | $ 29.25 | $ 51.50 | $ 618.00 |
| Collection | 0.00 | 63.83 | 63.83 | 766.00 |
| **Total** | **$22.25** | **$93.08** | **$115.33** | **$1,384.00** |
| Less: Debt Service Credit | 0.00 | 0.00 | 0.00 | 0.00 |